# SMART ERP Introduces Navy Business Changes

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On January 3, 2003, the Supply Maintenance Aviation Reengineering Team (SMART) Enterprise Resource Planning (ERP) program went live. The single software and process solution for E-2C Hawkeye aircraft and LM-2500 marine gas turbine engines combine maintenance, supply and financial operations into one seamless system.

SMART ERP is a pilot program that replaces legacy supply, maintenance and financial management systems with a modern, responsive, accurate and integrated system. SMART ERP improves parts management, provides total asset visibility, increases inventory modeling capability and facilitates data sharing.

*AK1 Christian holds the first successful transaction using the SMART ERP system.*

## Background

The ERP initiative began with a top-down approach. Sponsored by the Chairman of the Joint Chiefs of Staff, Joint Vision 2010 (now 2020) created a vision for revolutionizing, modernizing and streamlining business processes. This call for management and technological innovation was designed to achieve improved levels of effectiveness in joint warfighting. In response, the Revolution in Business Affairs (RBA), sponsored by the Secretary of the Navy, Commandant of the Marine Corps, and Chief of Naval Operations created a complementary business vision calling for the Navy to become more combat-efficient by improving the design of acquisition and support processes. Following extensive research, the Commercial Best Practices Executive Steering Group (ESG) determined in November 1998 that Navy could best reach these new visions by implementing ERP.

The Naval Supply Systems Command (NAVSUP) and the Naval Air Systems Command (NAVAIR) partnered to reengineer supply, maintenance and financial processes through implementation of an ERP system. This project replaces 1960s financial and maintenance legacy systems (Uniform Inventory Control Point (UICP), U2, and NALCOMIS (Naval Aviation Logistics Command Management Information System)) at Norfolk, San Diego and the Naval Inventory Control Point (NAVICP) with a single integrated system using SAP-based methodology. The NAVICP manages the two systems, Norfolk operates and maintains E-2C aircraft and Fleet and Industrial Supply Center (FISC) San Diego provides supply support for depot repair for both the E-2C and the LM-2500. Initial pilot participants include approximately 400 users at the NAVICP Mechanicsburg and Philadelphia, Pa., FISC San Diego, and the Aircraft Aviation Intermediate Maintenance Detachment and Regional Support Office (RSO) Norfolk. Teams in San Diego, Norfolk, Philadelphia and Mechanicsburg worked tirelessly to resolve transition and legacy data issues common to the implementation of new information technology systems.

Under direction of Vice Adm. John A. Lockard, Commander, NAVAIR, the ESG directed formation of four ERP pilots: SIGMA, CABRILLO, NEMAIS and SMART. The NAVAIR SIGMA pilot focuses on program management, including financial, asset, acquisition and human resources data. The Space and Naval Warfare Systems (SPAWAR) CABRILLO pilot focuses on Navy Working Capital Fund (NWCF) financial management. Led by the Naval Sea Systems Command (NAVSEA), the NEMAIS pilot focuses on project management and planning, system design and development, and deployment and operational support for maintenance activities.

## The Need

In addition to top Navy leadership's vision for business processes transformation, quite simply, the legacy applications and processes supporting Navy business transactions were long overdue for overhaul. Originally created in the 1960s, the legacy systems had undergone countless enhancements and upgrades, and many of the experienced software maintenance professionals who worked on the systems were no longer with the Navy.

But more importantly, the infrastructure of the legacy systems is cumbersome and very expensive to maintain. Annual operating and maintenance costs of legacy systems at NAVSUP alone are estimated to reach $55 million by 2005. With ERP systems, the Navy can expect to save $40 million of this cost. The Navy will also realize savings through reduced cycle times, improved visibility of inventory and avoidance of redundant data entry. When fully implemented SMART ERP could reduce inventory costs and lower inventory management-related infrastructure expenses by $100 million annually. These significant savings can be used to directly support the Navy's warfighting mission.

In the area of financial management, one of the biggest impediments in obtaining a "clean audit opinion" on Navy financial statements has been the inability of legacy systems to report historical costs of inventory because DoD legacy logistics systems were designed to report inventory value at standard selling price rather than historical cost. In order to obtain historical costs, the Defense Finance Accounting Service (DFAS) Cleveland had to approximate historical cost using a Cost of Goods Sold (COGS) model. Unfortunately, the COGS model is not endorsed by the audit community as an acceptable way to approximate inventory cost. In contrast, ERP systems are designed to record historical inventory costs with each transaction. Navy inventories managed by ERP will be recorded at Moving Average Cost (MAC), meeting requirements for a clean audit opinion by the audit community.

## The Solution

Originally started in fall 1999 as the Aviation Supply Chain Man-

agement/Maintenance Management (AvSCM/MM) ERP Project, SMART completed Phase I less than a year later with the development of Concept of Operations, areas of opportunities, lean maps quantifying process complexity, a Business Case Analysis (BAC), and software selection. SAP (Systems, Applications and Products in Data Processing) was selected for ERP backbone software, and Manugistics was selected for Advanced Planning and Scheduling (APS) software. The Navy selected SAP software after careful analysis. The Defense Logistics Agency (DLA) and U.S. Army also selected SAP. SAP software comprises a complete business system with one single database at its core controlled by a series of tables. SAP is composed of different application modules, each handling specific business processes feeding into the central database. SMART modules include: Sales and Distribution, Materials Management, Production Planning, Plant Maintenance, and Financial Accounting and Controlling. The modules function interdependently so that one module can affect related processes in another. A single database maintains data integrity and allows different views of the business. Functional costs can be identified, including costs relating to discrete weapons systems, costs of each maintenance level and operating costs by activity. The SAP core financial system is Joint Financial Management Improvement Program (JFMIP) certified, and it meets the requirements of the Chief Financial Officer Act of 1990.

In conjunction with SAP, APS provides algorithms and computations necessary to analyze data for demand planning, forecasting and budgeting. APS also includes modules for supply planning and transportation.

**Funds Management (FM) Area: USN1**

| Company Code: | | Fund Center Hierarchy Variant: CNO<br>Fund Centers (Partial List): | |
|---|---|---|---|
| 1200 | NAVAIR NWCF (DMAG) | 0105 | NAVAIR |
| | | AH0000 | NADEP-N |
| 3200 | NAVSUP NWCF (SMAG) | 0102 | NAVSUP |
| | | 010204 | NAVICP |
| *"Book of Record" Funds Management* | | CB0200 | FISC-NV |
| | | CA0100 | ASD Norfolk |
| | | CB0500 | FISC-SD |
| | | CE0800 | NADEP-NI |
| 4000 | CLF GF | 0101 | CLF |
| | | D00000 | VAW-120 |
| | | D00000 | VAW-121 |
| | | D00000 | VAW-123 |
| | | D00000 | AIMD Norfolk |
| 5000 | CPF GF | 0199 | CPF |
| | | E00000 | AIMD Point Mugu |

**Funds (Partial List):**

| | |
|---|---|
| NA2 | NWCF (DMAG) – NADEPs |
| NC1A28 | NWCF (SMAG) – DLA-managed Consumables |
| NC1A34 | NWCF (SMAG) – Aviation Consumables |
| NC1A81 | NWCF (SMAG) – Maritime DLRs |
| NC1A85 | NWCF (SMAG) – Aviation DLRs |
| 1506_2002 | Aircraft Procurement, Navy – FY02 |
| 1506_2003 | Aircraft Procurement, Navy – FY03 |
| 1804_2002 | Operations & Maintenance, Navy – FY02 |
| 1804_2003 | Operations & Maintenance, Navy – FY03 |

SAP Funds Management

## Going Live with the Phase 2.0 Pilot

Early morning January 3, 2003, aviation storekeepers from Helicopter Combat Squadron 8 (HC-8) placed the first two orders into the SMART Phase 2.0 live system, ordering four shear bolts from RSO Norfolk. Within minutes of the order being initiated by the squadron, the SMART ERP system responded, the location of parts was identified, a picking ticket was printed, and the proper financial and inventory transactions were performed in real-time — and all within a single integrated system. Moreover, the HC-8 technicians received the bolts within 30 minutes.

This very ordinary transaction in the Navy supply system marks the genesis of a very extraordinary change in the Navy's business methods. The importance of this event is that this transaction was conducted within an ERP software solution that will eventually enable the Navy to conduct all of its business in a single, fully-integrated environment, capturing business events in real-time — providing reliable, timely and complete inventory information.

## Financial Solution

The SMART ERP design will replace legacy supply and financial system applications for Navy Working Capital Fund /Supply Management Activity Group (NWCF/SMAG) retail (BP28) inventories supporting Naval Air Depot (NADEP) North Island and Naval Air Station Norfolk, as well as NWCF/SMAG wholesale (BP34/81/85) inventories supporting two in-scope weapons systems. SAP will immediately become "book of record" for in-scope retail inventory. Inventory accounting and billing book of record for in-scope wholesale inventory will use SAP while funds management book of record will remain in the legacy wholesale system finance application until SAP's procurement module is upgraded for Defense Acquisition Regulations Supplement (DFARS) compliancy. All in-scope NWCF/SMAG inventories will be recorded and reported at Moving Average Cost (MAC) in SAP, meeting requirements for a clean audit opinion on inventory valuation.

From the fleet perspective, one of the most important accomplishments of SMART is the ability to perform "exchange price billing" for Aviation Depot Level Repairables (AvDLRs). The SMART project built a sophisticated extension to SAP software, allowing fleet customers to pay net price for AvDLR repairs when they turn in carcasses. This has long been one of Navy's best business practices, possible in legacy systems only because they were not integrated. The design team had a formidable challenge in configuring the fully integrated SAP system to perform this accounting properly. The financial book of record supporting customers at SMART pilot sites remains in legacy systems: STARS-FL (Standard Accounting and Financial System-Field Level) for Norfolk fleet customers and DIFMS (Defense Industrial Funds Management System) for NADEP North Island. SMART built two interfaces to STARS-FL supporting station-use accounting in Norfolk.

Another financial interface SMART built accommodates the Daily Expenditure File (DEF) from Defense Cash Accountability System (DCAS) operated by DFAS. The DEF provides seven different registers from the U.S. Treasury, which update SAP financial ledgers. This interface automatically posts public vouchers, expenditures for interdepartmental material purchases, reimbursements for interdepartmental material sales, unfunded reimbursements, audited cross-disbursing, refunds (reversals) and adjustments/corrections.

While financial reporting requirements will continue to be accomplished through legacy financial systems for SMART Phase 2.0 customers, SAP now does departmental reporting requirements for in-scope NWCF inventory. SMART reached a significant milestone January 31, 2003, when it successfully closed its books at its first month-end and provided an automated and balanced datastream to the DFAS Cleveland Central Data Base (CDB).

## DFAS Partnership

A primary reason for SMART Phase 2.0 success is the close partnership between DFAS and NAVSUP financial subject matter experts. Nine DFAS Norfolk employees were trained on SAP to support month- and year-end reporting, and vendor invoice and accounts receivable processing. DFAS Cleveland assigned very experienced reporting and financial systems experts to SMART for full design, configuration and testing cycles for the Phase 2.0 pilot. As a result, the SMART interface with DFAS systems for departmental reporting and cash management worked flawlessly. In addition, SMART built a design that is not only interoperable with today's financial management enterprise architecture, but also flexible enough to support an ERP solution across the entire Navy, if not the entire DoD.

Designing and implementing ERP did not happen overnight. The SMART team has been making every effort to track and quickly resolve issues reported by pilot sites. The team has been tracking crucial Key Performance Indicators, conducting daily teleconferences with all four sites, and working through numerous calls to the Help Desk. The SMART ERP team and site representatives are dedicated to achieving the pilot's success. There is still room for improvement, but the process changes have been largely successful and show the Navy's resolve to improve business processes.

## Future and Convergence

One point is very clear for the future of SMART. SMART will not be going it alone. August 2, 2002, the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN(RD&A)) directed a single convergence of Navy ERP pilots. In response Navy ERP teams developed convergence and implementation timeline plans. Begun earlier this year, the full normalization effort focuses on common, centrally developed solutions managed to drive process and data standardization. Replacing the former ESG for Navy ERP pilots, the newly established Executive Committee (EXCOMM), will be responsible for leading the convergence effort. Led by ASN (RD&A), EXCOMM has representation from the SYSCOMs, OPNAV and the fleet.

*The Navy awarded a BPA to SAP Public Sector and Education, Inc. for Enterprise Resource Planning software, maintenance, services and training. SAP BPA N00104-02-A-ZE77 is open to all DoD.*

*Go to page 48 for a list of other IT solutions under the DON IT Umbrella Program.*

**Visit the DON IT Umbrella Web site: www.it-umbrella.navy.mil.**


To bolster force protection, the general public is urged not to send unsolicited mail, care packages or donations to servicemembers forward deployed unless you are a family member, loved one or personal friend.

On Oct. 30, 2002, the Department of Defense (DoD) suspended the "Operation Dear Abby" and "Any Servicemember" mail programs due to force protection concerns. Although these programs provide an excellent means of support to friends and loved ones stationed overseas, they also provide an avenue to introduce hazardous substances or materials into the mail system from unknown sources. Unsolicited mail, packages and donations from organizations and individuals also compete for limited airlift space used to transport supplies, warfighting materiel, and mail from family and loved ones.

Recently, DoD has become aware of organizations and individuals who continue to support some form of the Any Servicemember program by using the names and addresses of individual servicemembers and unit addresses. These programs are usually supported by well-intentioned, thoughtful and patriotic groups who are simply unaware of the new risks facing deployed military forces. Some individuals and groups publicize the names and addresses of servicemembers, ships or units on Web sites, with good intentions. The result, however, is a potential danger to the troops they wish to support.

DoD cannot support creative and well-intentioned efforts that defeat force protection measures, but can instead recommend alternatives to mail and donation programs.

To show support to troops overseas, the following are recommended:

Log on to the following Web sites to show support, to include greeting cards, virtual Thank You cards and calling card donations to help troops stay in contact with loved ones:

**www.defendamerica.mil/support_troops.html**

**www.usocares.org/home.htm**

**www.army.mil/operations/iraq/faq.html**

Visit Department of Veterans Affairs hospitals and nursing homes, and volunteer your services to honor veterans who served in past conflicts.